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(Original Signature of Member)

108TH CONGRESS  
1ST SESSION

**H. R.** \_\_\_\_\_

To authorize the Secretary of Energy to cooperate in the international magnetic fusion burning plasma experiment, or alternatively to develop a plan for a domestic burning plasma experiment, for the purpose of accelerating the scientific understanding and development of fusion as a long term energy source.

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**IN THE HOUSE OF REPRESENTATIVES**

Ms. LOFGREN introduced the following bill; which was referred to the  
Committee on \_\_\_\_\_

\_\_\_\_\_  
**A BILL**

To authorize the Secretary of Energy to cooperate in the international magnetic fusion burning plasma experiment, or alternatively to develop a plan for a domestic burning plasma experiment, for the purpose of accelerating the scientific understanding and development of fusion as a long term energy source.

1       *Be it enacted by the Senate and House of Representa-*  
2       *tives of the United States of America in Congress assembled,*



1 **SECTION 1. SHORT TITLE.**

2 This Act may be cited as the “Fueling the U.S.A.  
3 Through Unlimited Reliable Energy (FUTURE) Act of  
4 2003”.

5 **SEC. 2. FINDINGS.**

6 Congress finds the following:

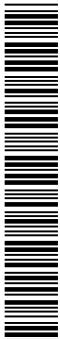
7 (1) Economic prosperity is closely linked to an  
8 affordable and ample energy supply.

9 (2) Environmental quality is closely linked to  
10 energy production and use.

11 (3) Population, worldwide economic develop-  
12 ment, energy consumption, and stress on the envi-  
13 ronment are all expected to increase substantially in  
14 the coming decades.

15 (4) The few energy options with the potential to  
16 meet economic and environmental needs for the  
17 long-term future should be pursued aggressively  
18 now, as part of a balanced national energy plan.

19 (5) Fusion energy is an attractive long-term en-  
20 ergy source due to a virtually inexhaustible supply of  
21 fuel available to all nations, its potential as a large  
22 base-load electric and hydrogen energy source re-  
23 quiring relatively little land mass, and its inherent  
24 safety and promise of minimal environmental im-  
25 pact.



1           (6) The National Research Council, the Presi-  
2           dent's Committee of Advisors on Science and Tech-  
3           nology, and the Secretary of Energy Advisory Board  
4           have each reviewed the Fusion Energy Sciences Pro-  
5           gram and each strongly supports the fundamental  
6           science and creative innovation of the program and  
7           has confirmed that progress toward the goal of pro-  
8           ducing practical fusion energy has been excellent, al-  
9           though much scientific and engineering work re-  
10          mains to be done.

11          (7) Each of these reviews and the opinions of  
12          other fusion scientists have stressed the need for a  
13          magnetic fusion burning plasma experiment to ad-  
14          dress key scientific issues and as a necessary step in  
15          the development of fusion energy.

16          (8) The United States fusion research commu-  
17          nity has developed a strong consensus that the first  
18          option for United States involvement in a burning  
19          plasma experiment should be through the inter-  
20          national project known as "ITER", and, that should  
21          the ITER project fail to go forward, then the con-  
22          struction of a domestic burning plasma experiment  
23          known as the Fusion Ignition Research Experiment  
24          or "FIRE" should be pursued aggressively.



1           (9) The United States scientific community has  
2           also developed a corresponding consensus that the  
3           eventual success of fusion power will require, concu-  
4           rent with a burning plasma experiment, strength-  
5           ened effort in fundamental fusion science, develop-  
6           ment of advanced technology, and innovation and  
7           optimization of configurations for an eventual fusion  
8           demonstration facility.

9           (10) The Fusion Energy Sciences Program  
10          budget is inadequate to support the necessary  
11          science and innovation for the present generation of  
12          experiments, and cannot accommodate the cost of  
13          participation in or construction of a burning plasma  
14          experiment

15 **SEC. 3. PLAN FOR FUSION EXPERIMENT.**

16          (a) IN GENERAL.—

17               (1) PRIORITY FOR INTERNATIONAL BURNING  
18          PLASMA PROJECT.—The Secretary of Energy (in  
19          this Act referred to as “the Secretary”) is author-  
20          ized to undertake full scientific and technological co-  
21          operation in the international burning plasma  
22          project known as ITER.

23               (2) ALTERNATIVE PROJECT.—If at any time  
24          during the negotiations on the ITER project, the  
25          Secretary determines that construction and oper-



1       ation of the ITER project is unlikely or infeasible,  
2       the Secretary shall send to Congress, as part of the  
3       budget request for the following year, a plan for im-  
4       plementing the domestic burning plasma experiment  
5       known as FIRE, including costs and schedules for  
6       such a plan. The Secretary shall refine such plan in  
7       full consultation with the Fusion Energy Sciences  
8       Advisory Committee and shall also transmit such  
9       plan to the National Research Council for review.

10       (b) UNITED STATES POLICY WITH RESPECT TO FU-  
11       SION ENERGY SCIENCE.—

12               (1) DECLARATION OF POLICY.—It shall be the  
13       policy of the United States to develop the scientific,  
14       engineering, and commercial infrastructure nec-  
15       essary to ensure that the United States is competi-  
16       tive with other nations in providing fusion energy for  
17       its own needs and the needs if other nations, includ-  
18       ing, by demonstrating electric power or hydrogen  
19       production for the United States energy grid uti-  
20       lizing fusion energy at the earliest date possible.

21               (2) FUSION ENERGY PLAN.—Within 6 months  
22       of the date of enactment of this act, the Secretary  
23       shall transmit to Congress a plan for carrying out  
24       the policy set forth in paragraph (1), including cost  
25       estimates, proposed budgets, potential international



1 partners, and specific programs for implementing  
2 such policy.

3 (A) REQUIREMENTS OF PLAN.—Such plan  
4 shall also ensure that—

5 (i) existing fusion research facilities  
6 are more fully utilized;

7 (ii) fusion science, technology, theory,  
8 advanced computation, modeling, and sim-  
9 ulation are strengthened;

10 (iii) new magnetic and inertial fusion  
11 research facilities are selected based on sci-  
12 entific innovation, cost effectiveness, and  
13 their potential to advance the goal of prac-  
14 tical fusion energy at the earliest date pos-  
15 sible;

16 (iv) such facilities that are selected  
17 are funded at a cost-effective rate;

18 (v) communication of scientific results  
19 and methods between the fusion energy  
20 science community and the broader sci-  
21 entific and technology communities is im-  
22 proved;

23 (vi) inertial confinement fusion facili-  
24 ties are utilized to the extent practicable



1 for the purpose of inertial fusion energy re-  
2 search and development; and

3 (vii) attractive alternative inertial and  
4 magnetic fusion energy approaches are  
5 more fully explored.

6 (B) REPORT ON FUSION MATERIALS AND  
7 TECHNOLOGY PROJECT.—In addition, the plan  
8 required by this section shall also address the  
9 status of, and to the degree possible, the costs  
10 and schedules for—

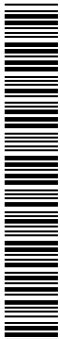
11 (i) the design and implementation of  
12 international or national facilities for the  
13 testing of fusion materials; and

14 (ii) the design and implementation of  
15 international or national facilities for the  
16 testing and development of key fusion tech-  
17 nologies.

18 **SEC. 4. DEFINITIONS.**

19 As used in this Act, the following definitions apply:

20 (1) The term “ITER” refers to the inter-  
21 national fusion research project whose design is  
22 complete and whose location and financing is cur-  
23 rently being negotiated between Japan, Europe, the  
24 Russian Federation, Canada, China, and the United  
25 States.



1           (2) The term “FIRE”, refers to the Fusion Ig-  
2           nition Research Experiment, the fusion research ex-  
3           periment for which design work has been supported  
4           by the Department of Energy in the as a possible al-  
5           ternative burning plasma experiment in the event  
6           that the ITER project fails to move forward.

7   **SEC. 5. AUTHORIZATION OF APPROPRIATIONS.**

8           There are authorized to be appropriated—

9           (1) for participation in the ITER project (or  
10          development of the Fire project) under section 3(a)  
11          of this Act—

12                   (A) \$12,000,000 for fiscal year 2004;

13                   (B) \$20,000,000 for fiscal year 2005;

14                   (C) \$50,000,000 for fiscal year 2006;

15                   (D) \$75,000,000 for fiscal year 2007; and

16                   (E) \$115,000,000 for fiscal year 2008; and

17          (2) for the Fusion Energy Sciences Program in  
18          addition to the sums under paragraph (1) of this  
19          section—

20                   (A) \$335,000,000 for fiscal year 2004;

21                   (B) \$349,000,000 for fiscal year 2005;

22                   (C) \$362,000,000 for fiscal year 2006;

23                   (D) \$377,000,000 for fiscal year 2007;

24                   and

25                   (E) \$393,000,000 for fiscal year 2008.

